12SY7

12SY7
PENTAGRID CONVERTER
SINGLE-ENDED METAL TYPE

For use with 12-cell storage-battery supply

GENERAL DATA

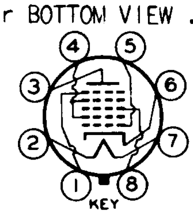
Electrical:

Heater, for Unipotential Cathode:		
Voltage	12.6	ac or dc volts
Current	0.15	amp
Direct Interelectrode Capacitances:		
Grid No.3 to All Other Electrodes (RF Input)	9.5●	μμf
Plate to All Other Electrodes (Mixer Output)	12●	μμf
Grid No.1 to All Other Electrodes (Osc. Input)	7●	μμf
Grid No.3 to Plate	0.13 max.●	μμf
Grid No.1 to Grid No.3	0.15 max.●	μμf
Grid No.1 to Plate	0.06 max.●	μμf
Grid No.1 to Shell, Grid No.5, and All Other Electrodes Except Cathode	4.4	μμf
Grid No.1 to Cathode	2.6	μμf
Cathode to Shell, Grid No.5, and All Other Electrodes Except Cathode	5	μμf

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-5/8"
Maximum Seated Length	2-1/16"
Maximum Diameter	1-5/16"
Bulb	Metal Shell, MT-8G
Base	Small Wafer Octal 8-Pin
Basing Designation for BOTTOM VIEW	8R

Pin 1 – Shell, Grid No.5
Pin 2 – Heater
Pin 3 – Plate
Pin 4 – Grids No.2 & No.4



Pin 5 – Grid No.1
Pin 6 – Cathode
Pin 7 – Heater
Pin 8 – Grid No.3

CONVERTER

Maximum Ratings, *Design-Center Values*:

PLATE VOLTAGE	300 max.	volts
GRIDS-No.2 and No.4 (SCREEN) VOLTAGE	100 max.	volts
GRIDS-No.2 and No.4 SUPPLY VOLTAGE	300 max.	volts
PLATE DISSIPATION	1.0 max.	watt
GRIDS-No.2 & No.4 DISSIPATION	1.0 max.	watt
TOTAL CATHODE CURRENT	14 max.	ma.
GRID-No.3 (CONTROL GRID) VOLTAGE:		
Negative bias value	50 max.	volts
Positive bias value	0 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	90 max.	volts
Heater positive with respect to cathode	90 max.	volts

● With shell connected to cathode.

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Characteristics - *Separate Excitation:* *

Plate Voltage.	26.5	100	250	volts
Grids-No.2 & No.4 Voltage	26.5	100	100	volts
Grid-No.3 Voltage.	-1	-2	-2	volts
Grid-No.1 (Oscillator Grid) Resistor	20000	20000	20000	ohms
Plate Resistance (Approx.)	-	0.5	1.0	megohm
Conversion Transconductance	250	425	450	μmhos
Conversion Transconductance (Approx.)	8♣	2□	2□	μmhos
Plate Current.	0.45	3.3	3.5	ma.
Grids-No.2 & No.4 Current	1.7	8.5	8.5	ma.
Grid-No.1 Current.	0.1	0.5	0.5	ma.
Total Cathode Current. . .	2.25	12.3	12.5	ma.

NOTE: The transconductance between grid No.1 and grids No.2 and No.4 connected to plate (not oscillating) is approximately 4500 μmhos under the following conditions: grids No.1, No.3, No.5 and shell at 0 volts; grids No.2 and No.4 and plate at 100 volts. Under the same conditions, the plate current is 27 milliamperes, and the amplification factor is 13.

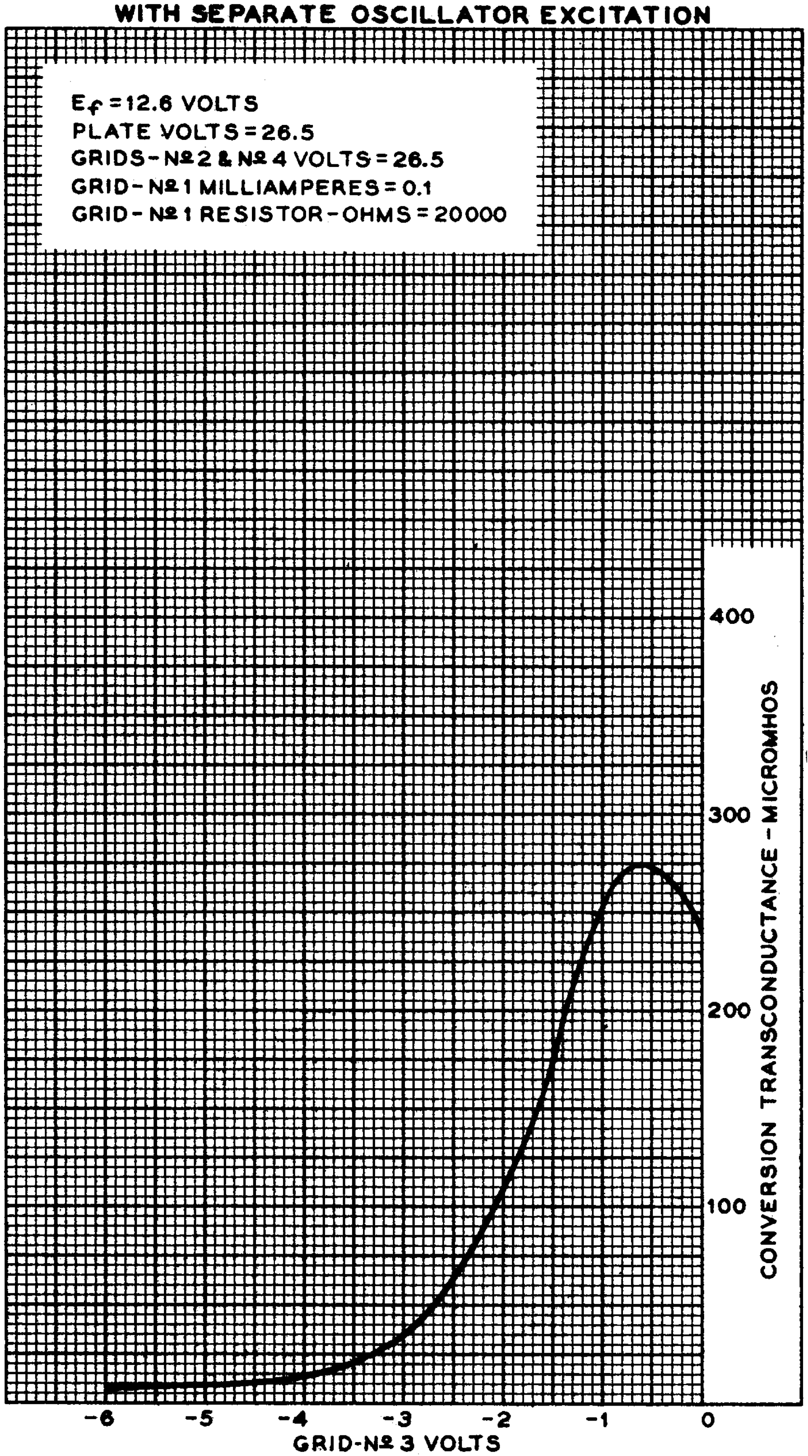
* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

♣ With grid-No.3 bias of -6 volts.

□ With grid-No.3 bias of -35 volts.

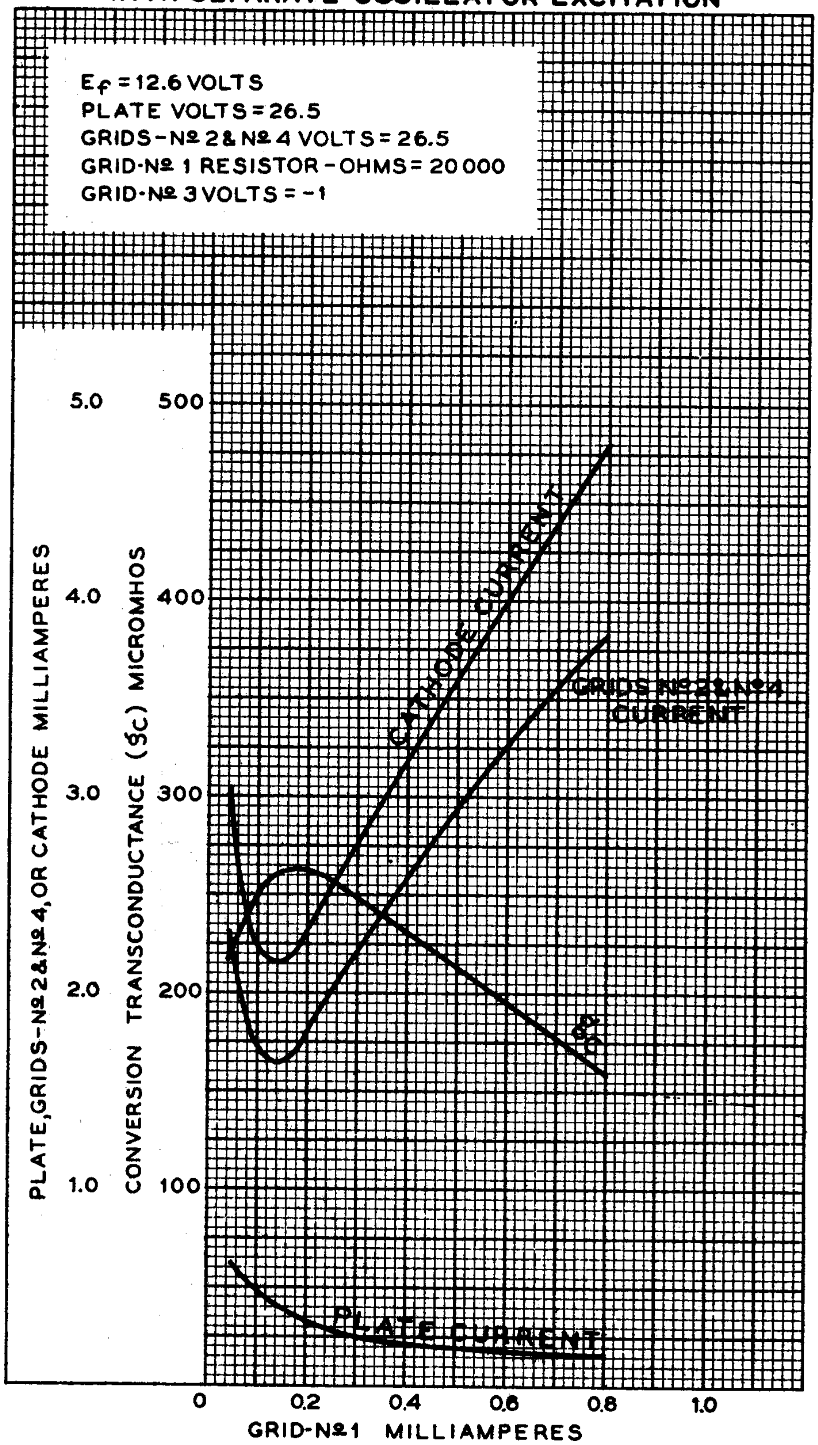
The curves under Type 6SA7 also apply to the 12SY7.

12SY7
OPERATION CHARACTERISTICS
WITH SEPARATE OSCILLATOR EXCITATION



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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY